

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Fixed and Mobile Satellite Service Bands at)	ET Docket No. 10-142
1525-1559 MHz and 1626.5-1660.5 MHz,)	
1610-1626.5 MHz and 2483.5-2500 MHz,)	
and 2000-2020 MHz and 2180-2200 MHz)	
_____)	

COMMENTS OF IRIDIUM SATELLITE LLC

Iridium Satellite LLC (“Iridium”) hereby submits these comments in response to the Commission’s request for comment on its Notice of Proposed Rulemaking and Notice of Inquiry regarding Mobile Satellite Service spectrum (“*MSS NPRM & NOP*”).¹ The Commission has rightfully recognized that it is of critical importance to retain market-wide MSS capability. As the only mobile satellite service provider offering coverage over the entire globe, Iridium provides a range of services throughout the world and particularly in regions that are not reached by terrestrial services. Iridium’s robust MSS system has played a critical role during national emergencies, such as Hurricanes Katrina and Rita, as well as international emergencies, such as this past year’s earthquakes in Haiti and Chile. Iridium also provides vital services to the Department of Defense and many federal U.S. bureaus, agencies and departments, including serving the critical and secure needs of U.S. and Coalition Forces throughout the Middle East region.

Additionally, Iridium is a leading provider of maritime, aviation, machine-to-machine

¹ *Fixed and Mobile Satellite Service Bands at 1525-1559 MHz and 1626.5-1660.5 MHz, 1610-1626.5 MHz and 2483.5-2500 MHz, and 2000-2020 MHz and 2180-2200 MHz*, Notice of Proposed Rulemaking and Notice of Inquiry, 25 FCC Rcd 9481 (2010) (“*MSS NPRM & NOP*”).

and land/mobile communications and the only provider of critical flight, maritime and worker safety applications in the polar regions.

Demand for Iridium's important and innovative services has increased and will continue to grow. Just this past year, Iridium's subscribers have grown by approximately 16.8 percent across its product and service areas.² And due to exceptionally high demand for Iridium's services during natural disasters and other emergencies, Iridium has been required to seek special temporary authority from the Commission to access additional spectrum. Moreover, Iridium's next generation system, Iridium NEXT, anticipated to begin launching in early 2015, will provide new and enhanced services and is projected to place further demands on Iridium's spectrum. Iridium NEXT will provide faster and higher quality voice and data services to Iridium's global customer base, including public safety, first responder, and defense subscribers. These greater-bandwidth, next generation services are eagerly anticipated by Iridium's subscribers, and are certain to promote substantial additional usage of Iridium's network and spectrum resources.

Given the increasing demand for Iridium's MSS, the Commission should ensure that adequate spectrum is available to meet current and future needs. In particular, the Big LEO band should be retained primarily for MSS use, and any terrestrial use of this band must remain ancillary, or secondary, to MSS. As such, to reach its terrestrial spectrum goals, the Commission is correct to focus on the 2 GHz band in its proposals, which, unlike the Big LEO band, is not currently extensively being used for MSS.

² See Iridium Communications, Inc., Form 10-Q at 20 (Aug. 9, 2010).

I. THE COMMISSION RIGHTFULLY RECOGNIZES THE UNIQUE SIGNIFICANCE OF MSS, ESPECIALLY TO PUBLIC SAFETY AND NATIONAL SECURITY.

The Commission correctly notes “the importance of maintaining MSS to provide services, for example, to public safety and Federal government agencies, to rural areas, and during natural disasters.”³ Iridium’s robust MSS system provides these critical communications services to first responders, the Federal Government, and other users and plays a vital role during national and international emergencies. Using the world’s largest commercial satellite constellation, which consists of sixty-six low-Earth orbiting (“LEO”), cross-linked satellites operating as a fully meshed network and supported by multiple in-orbit spares, Iridium offers satellite communications coverage of the entire Earth’s surface. Iridium already serves more than 383,000 subscribers worldwide, and in some parts of the world, Iridium is the only available communications connection.

Through Iridium’s MSS system, Iridium and its partners have played a vital and growing role in communications during national and international emergencies, including during Hurricanes Katrina and Rita and the recent earthquakes in Haiti and Chile. For example, after the devastating earthquake in Haiti, Iridium and its partners delivered communications services critical to the coordination of relief and rescue efforts. Relief organizations—including United Nations agencies, the American Red Cross, FEMA, the U.S. Department of Defense, the U.S. State Department, the Mexican Red Cross and others—relied on Iridium handsets and equipment for their communications needs in Haiti. Similarly, in the aftermath of the earthquake in Chile in February 2010, Iridium’s

³ *MSS NPRM & NOI*, ¶ 33.

services proved to be essential. Iridium's satellite communications network was also deployed in innovative ways to assist in the cleanup and recovery effort after the April 2010 explosion of the Deepwater Horizon oil rig and the subsequent oil spill in the Gulf of Mexico. By incorporating Iridium satellite transceivers into robots and buoys that can be deployed on site, researchers and other relief workers were able to monitor and track the movements of the oil spill in real time, greatly improving the efficiency of cleanup efforts.⁴

Iridium's services have also played a role in emergency preparedness. Since 2003, the U.S. National Oceanic and Atmospheric Administration ("NOAA") has depended on Iridium's services to operate its tsunami warning system, which utilizes satellite data links to transmit real-time data from deep ocean buoys. This warning system allowed NOAA to monitor the tsunami heading towards Hawaii after the Chilean earthquake.

Iridium also provides emergency backup communications to a variety of hospitals.⁵ For example, in the Baltimore-Washington, D.C. area, MedStar Health has installed nine Iridium multi-channel fixed terminals that provide up to four independent

⁴ See, e.g., Sylvie Barak, *Using Cellular M2M Technology To Clean Up the Gulf*, RCR UNPLUGGED, <http://unplugged.rcrwireless.com/index.php/20100909/news/3282/using-cellular-m2m-technology-to-clean-up-the-gulf/> (Sept. 9, 2010); Therese Poletti, *Gulf Oil Disaster Showcases Need For Better Robotics*, MARKETWATCH, <http://www.marketwatch.com/story/gulf-oil-disaster-shows-need-for-better-robotics-2010-06-01> (June 1, 2010).

⁵ See Chris Kirkham, *Satellite Phone Firm Focuses on Crisis Network*, WASHINGTON POST, June 26, 2006, at D01 (detailing Iridium's provision of an emergency satellite phone network for MedStar Health, the nonprofit owner of Washington Hospital Center and Georgetown University Hospital).

channels for incoming and outgoing satellite calls as well as 96 mobile handsets.⁶ These fixed terminals are interfaced with the buildings' private branch exchange (PBX) switching systems. Iridium also provides an integrated voice and data application that connects helicopter operators (particularly medevac helicopter pilots) with hospitals and emergency personnel. Through this application, medevac helicopters can transmit and obtain emergency medical support using voice and data communications and information such as flight tracking and weather information. MedSTAR Transport has equipped its three EC135 and one BK117 helicopters with Sky Connect TRACKER systems, which enables MedSTAR to view the location and status of its fleet anywhere and under virtually any conditions, using Iridium's satellite technology.⁷

Aside from Iridium's critical and growing role in emergency communications, most U.S. civilian bureaus, agencies and departments, as well as the U.S. Department of Defense and U.S. Armed Forces, including U.S. and Coalition Forces in Afghanistan and Iraq, rely heavily on Iridium MSS communications services for defense and civilian operations. Indeed, the Department of Defense owns and operates a dedicated gateway compatible exclusively with Iridium's network. Defense users require voice and two-way data communications capabilities with global coverage, low latency, mobility and security, and often have no alternate terrestrial communication capability, or rely on MSS as an important backup system.

⁶ Press Release: *MedStar Equips Hospitals and Personnel With Iridium Satellite Phones for Emergency Backup Communications*, Iridium Satellite LLC, June 26, 2006 available at <http://markets.financialcontent.com/bnet/news/read?GUID=118755>.

⁷ Press Release, Iridium Satellite LLC, *MedSTAR Selects Iridium Satellite Technology from Sky Connect for Tracking and Voice Communications with Helicopter Fleet* (Jan. 3, 2005) available at http://iridium.mediaroom.com/index.php?s=press_releases&item=718&printable.

Iridium is also a leading provider of maritime, aviation, machine-to-machine and land/mobile communications services. Iridium's maritime end-users, who access both data applications and voice services through Iridium's network, depend on Iridium's global network as they spend most of their time out of reach of terrestrial communications services. Iridium is an innovator in maritime communications, including through cutting edge e-Navigation and maritime safety information,⁸ and other high bandwidth ship-shore voice and data communications.⁹ Iridium also serves its aviation customers with a broad range of services including air-to-ground telephony and communications, air traffic control and air safety applications, and aviation passenger communications.

Iridium's global satellite network allows it to provide communications to areas and under conditions in which no other communications provider can. For example, Iridium is currently the only provider that can provide critical flight safety applications in all areas of the polar regions. When the sailboat *Ocean Watch* embarked on a 13 month circumnavigation of the North and South American continents it relied on Iridium's OpenPort system for its vital communications needs.¹⁰ The ship's crew used Iridium's

⁸ See Press Release: *Iridium Joins With Danish Maritime Safety Administration in the EfficienSea e-Navigation Project to Demonstrate Maritime Safety Information Broadcasts*, Iridium Communications Inc., Sept. 8, 2010 available at <http://investor.iridium.com/releasedetail.cfm?ReleaseID=505471>.

⁹ See, e.g., Press Release: *Norbulk Installs Iridium OpenPort(R) Across Fleet of Managed Ships in Move to Control Communication Costs*, Iridium Communications Inc., Sept. 7, 2010 available at <http://investor.iridium.com/releasedetail.cfm?ReleaseID=504989>.

¹⁰ Press Release: *Iridium OpenPort(R) Provides Reliable High-Bandwidth Voice and Data Communications for Around the Americas Expedition*, Iridium Communications Inc., May 20, 2010 available at <http://investor.iridium.com/releasedetail.cfm?ReleaseID=471810>.

satellite communications network to keep in contact with friends and family as well as to make daily reports, including image uploads, to their website and to transmit an entire book to their publisher from the most remote extremes of the continents.¹¹ Iridium's MSS network provides essential communications connectivity even in the most remote environments that terrestrial networks are unlikely to ever adequately cover.¹²

Iridium also provides satellite-based machine-to-machine communications, in which the Iridium communications network provides mobile data links for asset tracking and other people and business asset monitoring applications. Iridium's largest machine-to-machine users include mining, construction, oil and gas, utilities, heavy industry, forestry and transport companies, as well as public safety and disaster relief agencies. All of the above applications that operate off the Iridium network are in addition to the core land/mobile service that Iridium has offered through its satellite phone-based services since the company's inception.

Additionally, Iridium's next generation constellation, Iridium NEXT, anticipated to begin launching in early 2015, will continue to enhance the company's services. Iridium NEXT will give Iridium the capability to meet rapidly expanding demand for global mobile communications on land, at sea, and in the skies. By supporting new and enhanced services at faster speeds, Iridium NEXT will drive innovation in rapidly

¹¹ *Id.*

¹² As another example, Iridium provided voice and data communications to the 2010 Iditarod sled dog race, outfitting each sled with a GPS tracking device that provides crucial safety communications, and providing voice connectivity via Iridium satellite telephones. The Iditarod trail traverses over 1,000 miles of Alaska's harshest terrain, the majority of which is not covered by terrestrial landlines, cellular networks or other satellite communication services. See Press Release: *Iridium Provides Satellite Voice and Data Communications for 2010 Iditarod Sled Dog Race*, Iridium Communications Inc., March 4, 2010 available at <http://investor.iridium.com/releasedetail.cfm?ReleaseID=449246>.

expanding areas, such as enterprise global voice and data connectivity, asset tracking and other machine-to-machine applications, as well as new data-centric applications. Iridium NEXT will also provide greater bandwidth and innovative higher-speed data applications to Iridium's many public safety, first responder, and national defense customers.

II. THE BIG LEO BAND IS ALREADY BEING EFFECTIVELY USED BY MSS PROVIDERS AND SHOULD BE RETAINED FOR MSS USE TO ENSURE MARKET-WIDE MSS CAPABILITY INTO THE FUTURE.

As noted above, Iridium currently provides robust MSS, but Iridium will need additional spectrum for its future satellite services as demands on this spectrum will continue to increase. During the past year alone, demand for Iridium's services has grown across all of its services with 16.8 percent subscriber growth in the past year. Additionally, to support communications during national emergencies and natural disasters, large spikes in demand have at times exceeded Iridium's spectrum capacity, requiring it to seek special temporary authority to meet demand. For example, Iridium was granted special temporary authority to access additional spectrum to meet demand during Hurricane Katrina when it experienced a 3,000 percent increase in traffic in the region.¹³ Similarly, within the first forty-eight hours after the Haitian earthquake, Iridium's satellite network experienced an 18,000 percent surge in commercial voice traffic to and from Haiti as non-governmental organizations, government agencies and volunteers poured into the area. This sharp increase in demand for Iridium's services once again required it to seek special temporary authority from the Commission to utilize

¹³ Public Notice, Policy Branch information, Actions Taken, Report No. SAT-00324, File No. SAT-STA-20050923-00181 (Oct. 7, 2010).

additional spectrum.¹⁴ Moreover, Iridium anticipates that with the new capabilities offered by Iridium NEXT, demand for its services will only continue to increase.

Given the current and projected demand for Iridium's services, the Commission should ensure that spectrum allocated for MSS in the Big LEO band remains primarily for MSS use. Toward this end, the Commission should focus on encouraging MSS use of the Big LEO band, and any terrestrial use of spectrum in the band should remain truly ancillary to MSS. Altering the status quo in the Big LEO band would risk harming the important MSS that Iridium currently offers and would curb future advancements.

What is more, other MSS bands are more appropriate for ancillary terrestrial component ("ATC") and other terrestrial uses. The Commission is right to focus on the 2 GHz band as the best opportunity to identify spectrum for terrestrial wireless.¹⁵ Unlike the Big LEO band, adding primary Fixed and Mobile allocations to 2000-2020 and 2180-2200 MHz bands that are co-primary with the existing MSS allocation would not displace existing MSS systems that are extensively utilizing the spectrum.

¹⁴ On January 15, 2010, the Commission granted Iridium STA for testing and operation of its MSS system for a period ending February 4, 2010, in support of relief efforts in Haiti. Public Notice, Policy Branch information, Actions Taken, Report No. SAT-00661, File No. SAT-STA-20100115-00011 (Jan. 22, 2010). The Commission granted an extension until February 15, 2010. Public Notice, Policy Branch information, Actions Taken, Report No. SAT-00664, File No. SAT-STA-20100203-00018 (Feb. 5, 2010).

¹⁵ *MSS NPRM & NOI*, ¶¶ 10-16.

III. CONCLUSION

In sum, Iridium provides communications services to first responders, government and military personnel, and other users through a robust MSS system that cannot be replaced other communications providers. To preserve sufficient MSS capability in the United States, the Commission should preserve the Big LEO band for MSS use.

Respectfully submitted,

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